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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,617	03/29/2000	Gregory Graham	36512/CAG/G373	8377

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MCDERMOTT, WILL & EMERY (LOS ANGELES OFFICE)
2049 CENTURY PARK EAST
34TH FLOOR
LOS ANGELES, CA 90067-3208

[REDACTED] EXAMINER

PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/538,617	GRAHAM ET AL.	
	Examiner Guillermo Perez	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 March 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 30-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 30-63 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 March 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>0303</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Drawings

The corrected or substitute drawings were received on March 31, 2003. These drawings are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 30-31, 33, 37, and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. (U. S. Pat. 3,805,104) in view of W. Angele (U. S. Pat. 3,209,187).

Margrain et al. disclose an inductive coil (12) for an electromotive device, comprising:

- a pair of concentric conductive sheet metal winding portions, each comprising:
 - i. a plurality of axially extending conductive bands (A1...An, R1...Rn), each is separated from an adjacent conductive band (A1...An, R1...Rn) by a space, each of the conductive bands (A1...An) of one of the winding portions is coupled to one of the conductive bands (R1...Rn) of the other winding portion;

the winding portions are encapsulated in a homogenous ("Uniform in structure or composition throughout." *The American Heritage® Dictionary of the English Language, Third Edition* copyright © 1992 by Houghton Mifflin Company.) material (1, 16, and 31).

Margrain et al. disclose that the winding portions are encapsulated in a potting material (1, 16, and 31). Margrain et al. disclose an insulator (16, 17 in figures 12-13) disposed between the winding portions. Margrain et al. disclose that each of the spaces separating the conductive bands (A₁...A_n, R₁...R_n) is less than 1.5 times the thickness of each of the conductive bands (A₁...A_n, R₁...R_n in figure 13). Margrain et al. disclose an electrically insulated metal flywheel (20 in figure 8) coupled to the interior portion of the induction coil (12).

However, Margrain et al. do not disclose that the material extends from a space between two adjacent conductive bands of the one of the winding portions to a space between two adjacent conductive bands of the other winding portion. Margrain et al. do not disclose that each of the conductive bands comprises a tensile strength greater than 40,000 psi. Margrain et al. do not disclose that each of the conductive bands comprises yield strength greater than 30,000 psi. Margrain et al. do not disclose that each of the conductive bands comprises a percent elongation less than 200. Margrain et al. do not disclose that each of the conductive bands comprises hardness greater than a Brunell number of 70.

Angele discloses that the material (26) extends from a space between two adjacent conductive bands of one of the winding portions (12) to a space between two adjacent conductive bands of the other winding portion (12). Angele's invention has the purpose of joining adjacent conductors.

It would have been obvious at the time the invention was made to modify the inductive coil disclosed by Margrain et al. and provide it with the encapsulating potting material configuration disclosed by Angele for the purpose of joining adjacent conductors to prevent their separation through external forces.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the coil dimensions as claimed since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the material properties as claimed since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the filament with a thickness of about 0.00030-0.00075 inch since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

2. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of W. Angele as applied to claims 31 and 48 above, and further in view of Lifschitz (U. S. Pat. 3,698,079).

Margrain et al. and Angele substantially teaches the claimed invention except that it does not show that the potting material comprises polyimide.

Lifschitz discloses that the potting material comprises polyimide (column 2, lines 56-62). Lifschitz' invention has the purpose of providing an insulating base to the coils.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Angele and provide it with the potting material disclosed by Lifschitz for the purpose of providing an insulating base to the coils.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a polyimide as the potting material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

3. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of W. Angele as applied to claims 33 and 50 above, and further in view of Karol (U. S. Pat. 3,650,021).

Margrain et al. and Angele disclose an inductive coil as described on item 33 above. However, neither Margrain et al. nor Angele disclose a non-conductive filament wrapped around an outer surface of one of the windings. Neither Margrain et al. nor Angele disclose that the nonconductive filament comprises glass fiber. Neither Margrain et al. nor Angele disclose that a thickness of the non-conductive filament is about 0.00030-0.00075 inch.

Karol discloses a non-conductive filament (11) wrapped around an outer surface of one of the windings (10). Karol discloses that the nonconductive filament comprises glass fiber (column 2, lines 1-2). Karol's invention has the purpose of supporting the windings.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Angele and provide it with the fiberglass filament disclosed by Karol for the purpose of supporting the windings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the filament with a thickness of about 0.00030-0.00075 inch since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

4. Claims 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of W. Angele as applied to claim 30 above, and further in view of Toshiba (JP 05328678A).

Margrain et al. and Angele disclose an inductive coil as described on item 30 above. However, neither Margrain et al. nor Angele disclose that each of the conductive sheet metal windings comprises precision machined and rolled copper.

Toshiba discloses that each of the conductive sheet metal windings (4) comprises precision machined and rolled copper (see abstract). The invention of Toshiba has the purpose of improving dimensional accuracy between the respective coils.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Angele and provide it with the precision machined and rolled copper disclosed by Toshiba for the purpose of improving dimensional accuracy between the respective coils.

Referring to claims 38 and 55, no patentable weight has been given to the method of manufacturing limitations (i. e. precision machined, rolled) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

5. Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of W. Angele as applied to claims 30 and 47 above, and further in view of Kliman et al. (U. S. Pat. 5,793,138).

Margrain et al. and Angele substantially teaches the claimed invention except that it does not show that the electrical insulation comprises an anodized outer surface of the flywheel, the anodized outer surface being in contact with the interior portion of the induction coil. Neither Margrain et al. nor Angele disclose that the metal comprises aluminum.

Kliman et al. disclose that the electrical insulation comprises an anodized inner surface of the induction coil (column 4, line 66 through column 5, line 2), the anodized

inner surface being in contact with the exterior portion of the flywheel. Kliman et al. disclose that the metal comprises aluminum. The invention of Kliman et al. has the purpose of insulating the induction coils from the flywheel material.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Angele and provide it with anodizing feature disclosed by Kliman et al. for the purpose of insulating the induction coils from the flywheel material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to anodize the outer surface of the flywheel instead of the inner surface of the induction coil since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the flywheel of anodized aluminum since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

6. Claims 47-49, 50, 54, and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. (U. S. Pat. 3,805,104) in view of Umeki (U. S. Pat. 5,130,596).

Margrain et al. disclose an inductive coil for an electromotive device, comprising:

- a pair of concentric conductive sheet metal winding portions, each comprising:
 - i. a plurality of axially extending conductive bands (A₁...A_n, R₁...R_n), each being separated from an adjacent conductive band (A₁...A_n, R₁...R_n) by a space, each of the conductive bands (A₁...A_n) of one of the winding portions being coupled to one of the conductive bands (R₁...R_n) of the other winding portion.

Margrain et al. disclose that the winding portions are encapsulated in a potting material (1, 16, and 31). Margrain et al. disclose an insulator (16, 17 in figures 12-13) disposed between the winding portions. Margrain et al. disclose that each of the spaces separating the conductive bands (A₁...A_n, R₁...R_n) is less than 1.5 times the thickness of each of the conductive bands (A₁...A_n, R₁...R_n in figure 13). Margrain et al. disclose an electrically insulated metal flywheel (20 in figure 8) coupled to the interior portion of the induction coil (12).

However, Margrain et al. do not disclose that the winding portions are encapsulated in a non-layered material that extends from a space between two adjacent conductive bands of said one of the winding portions to a space between two adjacent bands of the other winding portion. Margrain et al. do not disclose that each of the conductive bands comprises a tensile strength greater than 40,000 psi. Margrain et al. do not disclose that each of the conductive bands comprises yield strength greater than 30,000 psi. Margrain et al. do not disclose that each of the conductive bands comprises

a percent elongation less than 200. Margrain et al. do not disclose that each of the conductive bands comprises hardness greater than a Brunell number of 70.

Umeki discloses that the winding portions (figures 8-10) are encapsulated in a non-layered material (18) that extends from a space between two adjacent conductive bands (5a, 5b) of said one of the winding portions to a space between two adjacent bands (5a, 5b) of the other winding portion. Umeki discloses that the potting material comprises polyimide. Umeki's invention has the purpose of not permitting the commutator segments and the armature coil to be separated from each other even when a strong tensile force is exerted on their connection portions.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and provide it with the encapsulating material configuration disclosed by Umeki for the purpose of not permitting the armature coil to be separated from each other even when a strong tensile force is exerted on their connection portions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the coil dimensions as claimed since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the material properties as claimed since it has been held to be within the general skill of a worker in the art to select a known material on the

basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the filament with a thickness of about 0.00030-0.00075 inch since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a polyamide as the potting material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

7. Claims 51-53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of Umeki as applied to claims 33 and 50 above, and further in view of Karol (U. S. Pat. 3,650,021).

Margrain et al. and Umeki disclose an inductive coil as described on item 33 above. However, neither Margrain et al. nor Umeki disclose a non-conductive filament wrapped around an outer surface of one of the windings. Neither Margrain et al. nor Umeki disclose that the nonconductive filament comprises glass fiber. Neither Margrain et al. nor Umeki disclose that a thickness of the non-conductive filament is about 0.00030-0.00075 inch.

Karol discloses a non-conductive filament (11) wrapped around an outer surface of one of the windings (10). Karol discloses that the nonconductive filament comprises glass fiber (column 2, lines 1-2). Karol's invention has the purpose of supporting the windings.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Umeki and provide it with the fiberglass filament disclosed by Karol for the purpose of supporting the windings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the filament with a thickness of about 0.00030-0.00075 inch since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

8. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of Umeki as applied to claims 30 and 47 above, and further in view of Toshiba (JP 05328678A).

Margrain et al. and Umeki disclose an inductive coil as described on item 30 above. However, neither Margrain et al. nor Umeki disclose that each of the conductive sheet metal windings comprises precision machined and rolled copper.

Toshiba discloses that each of the conductive sheet metal windings (4) comprises precision machined and rolled copper (see abstract). The invention of Toshiba has the purpose of improving dimensional accuracy between the respective coils.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Umeki and provide it with the precision machined and rolled copper disclosed by Toshiba for the purpose of improving dimensional accuracy between the respective coils.

Referring to claim 55, no patentable weight has been given to the method of manufacturing limitations (i. e. precision machined, rolled) since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

9. Claims and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margrain et al. in view of Umeki as applied to claims 30 and 47 above, and further in view of Kliman et al. (U. S. Pat. 5,793,138).

Margrain et al. and Umeki substantially teaches the claimed invention except that it does not show that the electrical insulation comprises an anodized outer surface of the flywheel, the anodized outer surface being in contact with the interior portion of the induction coil. Neither Margrain et al. nor Umeki disclose that the metal comprises aluminum.

Kliman et al. disclose that the electrical insulation comprises an anodized inner surface of the induction coil (column 4, line 66 through column 5, line 2), the anodized

inner surface being in contact with the exterior portion of the flywheel. Kliman et al. disclose that the metal comprises aluminum. The invention of Kliman et al. has the purpose of insulating the induction coils from the flywheel material.

It would have been obvious at the time the invention was made to modify the inductive coil of Margrain et al. and Umeki and provide it with anodizing feature disclosed by Kliman et al. for the purpose of insulating the induction coils from the flywheel material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to anodize the outer surface of the flywheel instead of the inner surface of the induction coil since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the flywheel of anodized aluminum since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Response to Arguments

Applicant's arguments with respect to claims 47-63 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicant's remark that neither Margrain nor Angele renders Applicants' approach unpatentable, it must be noted that at least Margrain discloses the

insulating material being homogeneous. As mentioned above, The American Heritage® Dictionary of the English Language, Third Edition copyright © 1992 by Houghton Mifflin Company defines the term "homogeneous" as something being: "uniform in structure or composition throughout". The insulating material in Margrain is homogeneous because it is uniform in composition throughout. It is an insulating layer made of one composition: Mylar or polyester. Of course, this only pertains to the material of which the insulation is made and not to the structural configuration claimed. Angele discloses the structural configuration.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to the Notice of References Cited for other patents disclosing the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

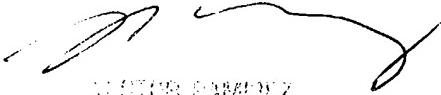
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
June 28, 2003



GUILLERMO PEREZ
USPTO EXAMINER
TECHNOLOGY CENTER 2800